

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter I of the Patent Cooperation Treaty)  
(PCT Rule 44bis)

Applicant's or agent's file reference 664628	<b>FOR FURTHER ACTION</b>	
See item 4 below		
International application No. PCT/JP2004/009621	International filing date ( <i>day/month/year</i> ) 30 June 2004 (30.06.2004)	Priority date ( <i>day/month/year</i> ) 29 July 2003 (29.07.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant KYOCERA CORPORATION		

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																
<p>3. This report contains indications relating to the following items:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center; padding: 5px;"><input checked="" type="checkbox"/></td> <td style="width: 85%; text-align: left; padding: 5px;">Box No. I Basis of the report</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="width: 85%; text-align: left; padding: 5px;">Box No. II Priority</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="width: 85%; text-align: left; padding: 5px;">Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="width: 85%; text-align: left; padding: 5px;">Box No. IV Lack of unity of invention</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input checked="" type="checkbox"/></td> <td style="width: 85%; text-align: left; padding: 5px;">Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="width: 85%; text-align: left; padding: 5px;">Box No. VI Certain documents cited</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input checked="" type="checkbox"/></td> <td style="width: 85%; text-align: left; padding: 5px;">Box No. VII Certain defects in the international application</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><input checked="" type="checkbox"/></td> <td style="width: 85%; text-align: left; padding: 5px;">Box No. VIII Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I Basis of the report	<input type="checkbox"/>	Box No. II Priority	<input type="checkbox"/>	Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI Certain documents cited	<input checked="" type="checkbox"/>	Box No. VII Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII Certain observations on the international application
<input checked="" type="checkbox"/>	Box No. I Basis of the report															
<input type="checkbox"/>	Box No. II Priority															
<input type="checkbox"/>	Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability															
<input type="checkbox"/>	Box No. IV Lack of unity of invention															
<input checked="" type="checkbox"/>	Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement															
<input type="checkbox"/>	Box No. VI Certain documents cited															
<input checked="" type="checkbox"/>	Box No. VII Certain defects in the international application															
<input checked="" type="checkbox"/>	Box No. VIII Certain observations on the international application															
<p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis.2).</p>																

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35	Date of issuance of this report 22 May 2006 (22.05.2006)
Authorized officer  Yoshiko Kuwahara	Telephone No. +41 22 338 90 90

**PATENT COOPERATION TREATY**

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

**PCT**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

		Date of mailing (day/month/year)
Applicant's or agent's file reference <b>664628</b>	FOR FURTHER ACTION See paragraph 2 below	
International application No. <b>PCT/JP2004/009621</b>	International filing date (day/month/year) <b>30.06.2004</b>	Priority date (day/month/year) <b>29.07.2003</b>
International Patent Classification (IPC) or both national classification and IPC		
Applicant <b>KYOCERA CORPORATION</b>		

<p>1. This opinion contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>
<p>2. <b>FURTHER ACTION</b></p> <p>If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.</p> <p>If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.</p> <p>For further options, see Form PCT/ISA/220.</p> <p>3. For further details, see notes to Form PCT/ISA/220.</p>

Name and mailing address of the ISA/JP	Authorized officer
Facsimile No.	Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/JP2004/009621

Box No. I	Basis of this opinion
1.	With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item. <input type="checkbox"/> This opinion has been established on the basis of a translation from the original language into the following language which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2.	With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of: a. type of material <input type="checkbox"/> a sequence listing <input type="checkbox"/> table(s) related to the sequence listing b. format of material <input type="checkbox"/> in written format <input type="checkbox"/> in computer readable form c. time of filing/furnishing <input type="checkbox"/> contained in the international application as filed. <input type="checkbox"/> filed together with the international application in computer readable form. <input type="checkbox"/> furnished subsequently to this Authority for the purposes of search.
3.	<input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4.	Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/JP2004/009621

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																										
<p><b>1. Statement</b></p> <table> <tr> <td>Novelty (N)</td> <td>Claims</td> <td>1-14</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td>NO</td> </tr> <tr> <td>Inventive step (IS)</td> <td>Claims</td> <td>3, 13</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td>1, 2, 4-12, 14</td> <td>NO</td> </tr> <tr> <td>Industrial applicability (IA)</td> <td>Claims</td> <td>1-14</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td>NO</td> </tr> </table>				Novelty (N)	Claims	1-14	YES		Claims		NO	Inventive step (IS)	Claims	3, 13	YES		Claims	1, 2, 4-12, 14	NO	Industrial applicability (IA)	Claims	1-14	YES		Claims		NO
Novelty (N)	Claims	1-14	YES																								
	Claims		NO																								
Inventive step (IS)	Claims	3, 13	YES																								
	Claims	1, 2, 4-12, 14	NO																								
Industrial applicability (IA)	Claims	1-14	YES																								
	Claims		NO																								
<p><b>2. Citations and explanations:</b></p> <p>Document 1: JP 2001-181042 A (Kyocera Corporation) 3 July 2001      Document 2: JP 2003-86475 A (Kyocera Corporation) 30 March 2003      Document 3: JP 2002-362966 A (Nihon Ceratec Co., Ltd.) 18 December 2002</p> <p>Document 1 cited in the international search report describes a high-density yttrium sintered body containing sintering additive such as Si, Al, and the like on the ppm order such that corrosion resistance is not affected as a component with excellent plasma resistance. In addition, document 2 states that in a material containing yttrium, sintering by using a gentle temperature increase curve and reducing temperature variations in the manufactured product results in superior compactness and high strength.</p> <p>This being the case, this examination finds that persons skilled in the art can easily manufacture the sintered body described in document 1 using the sintering method described in document 2, and in that process using a firing jig with a higher melting point than the firing temperature is merely a conventional means.</p> <p>Therefore, the inventions of this application (claims 1, 2, 4-12, and 14) lack an inventive step.</p> <p>Furthermore, document 3 cited in the international search report describes a plasma resistant yttrium sintered body containing 5 wt.% or more MgO. However, no publicly available document describes or suggests including AEO (AE = Ca, Mg, Sr, or Ba) in a yttrium sintered body on the ppm order.</p> <p>Therefore, the inventions of this application (claims 3 and 13) are novel and involve an inventive step.</p>																											

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/JP2004/009621

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

The term "chimitsushitsu (expressed by a combination of Chinese characters)" on page 24 of the specification is a typographical error for "chimitsushitsu (combination of Chinese characters for "fine").

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/JP2004/009621

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1) It is explained that the inventions of this application obtain the specified mechanical strength and corrosion resistance by placing a numerical restriction on the difference between the mean crystal particle diameter at the surface and deep within the sintered body at "30 µm" or less and minimizing the internal stress within the sintered body.

However, it is highly unlikely, for example, that a case in which the mean crystal particle diameters of the two are 40 µm and 10 µm and a case in which they are 200 µm and 170 µm will result in equivalent performance of the sintered body.

In other words, this examination finds that for this numerical restriction, if the mean crystal particle diameters are not clearly stated, it is impossible to grasp their technical significance.

However, the specification of this application provides no concrete explication whatsoever concerning the mean crystal particle diameters at the surface and deep within the sintered body.

2) The specification of this application only explains the negative effect of having Si, Fe, and Al mixed into the sintered body (page 11).

Therefore, the reason for intentionally including these ingredients is unclear.